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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,214

07/14/2005

Wallace T Ashton

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1751

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7590

03/14/2007

MERCK AND CO., INC

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EXAMINER

AULAKH, CHARANJIT

ART UNIT

PAPER NUMBER

1625

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,214	ASHTON ET AL.	
	Examiner	Art Unit	
	Charanjit S. Aulakh	1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 and 53-56 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-51 is/are allowed.
- 6) ☒ Claim(s) 53-56 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/17/05</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. According to a preliminary amendment filed on July 14, 2005, the applicants have canceled claim 52 and furthermore, have added new claims 53-56.
2. Claims 1-51 and 53-56 are now pending in the application.

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: the filing date of provisional application is incorrect. It should be 01/17/2003.

Specification

4. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 53-56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The following eight different factors (see *Ex parte Foreman*, 230 USPQ at 547; *Wands*,

In re, 858.F. 2d 731, 8 USPQ 2d 1400, Fed. Cir. 1988) must be considered in order for the specification to be enabling for what is being claimed:

Quantity of experimentation necessary, the amount of direction or guidance provided, presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability and the breadth of claims. In the instant case, the specification is not enabling based on at least four of the above mentioned eight different factors such as quantity of experimentation necessary, the amount of direction or guidance provided, presence of working examples, state of the prior art, unpredictability and the breadth of claims.

The instant specification mentions that the instant compounds are inhibitors of dipeptidyl peptidase-IV enzyme (DP-IV). The specification also mentions in vitro assay for determining this inhibition of DP-IV on page 30. The specification further mentions on page 30, lines 18-21 that the following examples had activity in inhibiting the DP-IV enzyme activity. However, there is no teaching in the specification regarding specific exemplified compounds which were tested in these assays. The applicants need to provide these data in an affidavit form to support inhibition of DP-IV enzyme activity by the instant compounds since they do have these data available according to the instant specification. There is no teaching or guidance present in the specification or prior art that hyperactivity or increased activity of DP-IV enzyme is implicated in the etiology of obesity and diabetes. Actually, the instant specification mentions on page 3, lines 7-8 that DP-IV inhibitors have not been studied extensively to date, especially for utilities other than diabetes. There are no working examples present showing efficacy of instant

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compounds either alone or in combination with any other drug in known animal models of obesity and diabetes. There is lot of unpredictability regarding outcome of the combination treatment (diverse group of drugs having totally different mechanism of action) due to drug interaction. There is no teaching either in the instant specification or prior art that combination of DP-IV enzyme inhibitors with diverse classes of drugs mentioned in instant claim 56 will actually produce any beneficial effect such as potentiate the therapeutic effect or reduce adverse effects of DP-IV enzyme inhibitors. The combination treatment may actually antagonize the therapeutic effect of instant compounds. The instant compounds of formula I encompasses hundreds of thousands of compounds based on the values of variables R1-R10, x, y, z and Ar and therefore, in absence of such teachings, guidance, presence of working examples, prior art and unpredictability, it would require undue experimentation to demonstrate efficacy of instant compounds either alone or in combination with hundreds of thousands of other drugs in known animal models obesity and diabetes and hence their utility for treating these disorders.

Allowable Subject Matter

7. The following is a statement of reasons for the indication of allowable subject matter: Claims 1-51 are allowed since the instant compounds of formula (I) and pharmaceutical compositions containing these compounds are neither disclosed nor obvious over the prior art. In the art, Colandrea (U.S. Patent 7,157,490) discloses Phenylalanine derivatives as dipeptidyl peptidase inhibitors for treating diabetes which are closely related to the instant compounds. However, closely related compounds (see

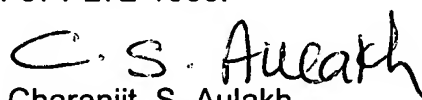
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compounds 102-105 in table 3 in column 73) disclosed by Colandrea differ in structure from the instant compounds by having monocyclic piperidine ring instead of bicyclic ring (piperidine ring fused to a 5-membered heteroaryl ring).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charanjit S. Aulakh whose telephone number is (571)272-0678. The examiner can normally be reached on Monday through Friday, 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas McKenzie can be reached on (571)272-0670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Charanjit S. Aulakh
Primary Examiner
Art Unit 1625